

DATA TABLES

1998 SURVEY OF EARNED DOCTORATES

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Table 1. Doctorates awarded by U.S. colleges and universities, 1958-1998

Year	Number of Ph.D.s	Percent Change*	Year	Number of Ph.D.s	Percent Change*	Year	Number of Ph.D.s	Percent Change*
1957	8,611	1.1	1971	31,867	8.0	1985	31,297	-0.1
1958	8,773	1.9	1972	33,041	3.7	1986	31,902	1.9
1959	9,213	5.0	1973	33,755	2.2	1987	32,370	1.5
1960	9,733	5.6	1974	33,047	-2.1	1988	33,500	3.5
1961	10,413	7.0	1975	32,952	-0.3	1989	34,327	2.5
1962	11,500	10.4	1976	32,946	0.0	1990	36,067	5.1
1963	12,728	10.7	1977	31,716	-3.7	1991	37,534	4.1
1964	14,325	12.5	1978	30,875	-2.7	1992	38,890	3.6
1965	16,340	14.1	1979	31,239	1.2	1993	39,801	2.3
1966	17,949	9.8	1980	31,020	-0.7	1994	41,034	3.1
1967	20,403	13.7	1981	31,356	1.1	1995	41,743	1.7
1968	22,937	12.4	1982	31,111	-0.8	1996	42,414	1.7
1969	25,743	12.2	1983	31,281	0.5	1997	42,555	0.3
1970	29,498	14.6	1984	31,337	0.2	1998	42,683	0.3

*From previous year.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2. Doctorates awarded by U.S. colleges and universities per institution, 1961-1998

Year	Number of Ph.D.s	Number of Institutions	Ph.D.s per Institution	Year	Number of Ph.D.s	Number of Institutions	Ph.D.s per Institution
1961	10,413	174	60	1980	31,020	325	95
1962	11,500	175	66	1981	31,356	328	96
1963	12,728	186	68	1982	31,111	333	93
1964	14,325	196	73	1983	31,281	337	93
1965	16,340	206	79	1984	31,337	336	93
1966	17,949	216	83	1985	31,297	342	92
1967	20,403	220	93	1986	31,902	345	92
1968	22,937	230	100	1987	32,370	353	92
1969	25,743	232	111	1988	33,500	355	94
1970	29,498	242	122	1989	34,327	360	95
1971	31,867	264	121	1990	36,067	358	101
1972	33,041	271	122	1991	37,534	367	102
1973	33,755	290	116	1992	38,890	370	105
1974	33,047	297	111	1993	39,801	375	106
1975	32,952	297	111	1994	41,034	377	109
1976	32,946	299	110	1995	41,743	384	109
1977	31,716	309	103	1996	42,415	392	108
1978	30,875	316	98	1997	42,555	382	111
1979	31,239	316	99	1998	42,683	387	110

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 3. Top 20 doctorate-granting institutions by broad field of doctorate, 1998

Institution	Number of Ph.D.s	Institution	Number of Ph.D.s
All Fields		Physical Sciences*	
University of Texas-Austin	834	University of California-Berkley	156
University of Wisconsin-Madison	760	University of Wisconsin-Madison	139
University of California-Berkeley	748	University of Illinois-Urbana/Champaign	139
University of Minnesota-Twin Cities	724	Stanford University	138
University of Illinois-Urbana/Champaign	706	University of Texas-Austin	129
University of Michigan-Ann Arbor	687	Massachusetts Institute of Technology	129
Ohio State University-Main Campus	664	University of Michigan-Ann Arbor	122
University of California-Los Angeles	605	California Institute of Technology	116
Pennsylvania State University-Main Campus	597	Purdue University-Main Campus	108
Stanford University	595	Ohio State University-Main Campus	108
Harvard University	560	University of Minnesota-Twin Cities	106
Nova Southeastern University	543	University of California-Los Angeles	106
Texas A&M University-College Station	528	University of Washington	103
Purdue University-Main Campus	496	Harvard University	101
Massachusetts Institute of Technology	492	Cornell University-Endowed Colleges	101
University of Washington	478	University of Arizona	99
University of Maryland-College Park	476	Texas A&M University-College Station	99
Cornell University-Endowed Colleges	476	University of Maryland-College Park	97
Columbia University in the City of New York	462	University of North Carolina-Chapel Hill	92
University of Florida	457	University of Florida	90
Engineering		Life Sciences	
Massachusetts Institute of Technology	229	University of Wisconsin-Madison	185
Stanford University	177	University of California-Davis	175
Georgia Institute of Technology-Main Campus	175	University of Minnesota-Twin Cities	171
University of Illinois-Urbana/Champaign	175	Johns Hopkins University	161
University of Michigan-Ann Arbor	175	Ohio State University-Main Campus	158
University of Texas-Austin	160	Harvard University	152
University of California-Berkeley	153	University of California-Berkeley	141
Pennsylvania State University-Main Campus	144	University of Florida	141
Purdue University-Main Campus	139	Texas A&M University-College Station	137
Texas A&M University-College Station	115	Cornell University-Endowed Colleges	128
University of Wisconsin-Madison	109	University of Illinois-Urbana/Champaign	117
Carnegie Mellon University	99	University of North Carolina-Chapel Hill	116
University of Minnesota-Twin Cities	98	University of Georgia	115
University of Florida	97	University of Washington	113
Northwestern University	94	Michigan State University	111
North Carolina State University-Raleigh	94	Purdue University-Main Campus	111
Virginia Polytechnic Institute and State Univ.	93	University of Michigan-Ann Arbor	108
Ohio State University-Main Campus	89	Pennsylvania State University-Main Campus	103
Cornell University-Endowed Colleges	84	University of California-Los Angeles	96
University of Maryland-College Park	82	University of Texas-Austin	96

Table 3, Continued. Top 20 doctorate-granting institutions by broad field of doctorate, 1998

Institution	Number of Ph.D.s	Institution	Number of Ph.D.s
Social Sciences		Humanities	
Nova Southeastern University	149	University of Texas-Austin	151
University of Wisconsin-Madison	123	New York University	147
Columbia University in the City of New York	107	University of California-Berkeley	138
University of California-Berkeley	105	University of California-Los Angeles	130
University of Chicago	105	Harvard University	128
University of Michigan-Ann Arbor	104	Columbia University in the City of New York	124
Harvard University	101	Yale University	115
University of California-Los Angeles	99	University of Chicago	113
CUNY Graduate School and University	99	Indiana University-Bloomington	107
University of Texas-Austin	98	University of Michigan-Ann Arbor	107
University of Illinois-Urbana/Champaign	92	University of Wisconsin-Madison	98
University of Minnesota-Twin Cities	88	University of Minnesota-Twin Cities	96
Michigan State University	87	Princeton University	94
University of Pennsylvania	87	University of Pennsylvania	91
Northwestern University	82	CUNY Graduate School and University	87
Ohio State University-Main Campus	80	Ohio State University-Main Campus	87
University of Maryland-College Park	79	Stanford University	86
Yale University	78	University of Illinois-Urbana/Champaign	79
California School of Prof. Psych.-San Diego	76	University of Washington	77
Texas A&M University-College Station	76	Cornell University-Endowed Colleges	69
Education		Professional/Other Fields	
Nova Southeastern University	298	Nova Southeastern University	58
Teachers College at Columbia University	162	University of Texas-Austin	55
University of Texas-Austin	145	Florida State University	43
Pennsylvania State University-Main Campus	128	University of Wisconsin-Madison	42
University of Minnesota-Twin Cities	125	University of Minnesota-Twin Cities	40
Virginia Polytechnic Institute and State Univ.	122	New York University	40
Ohio State University-Main Campus	108	University of Maryland-College Park	36
University of Southern California	104	Michigan State University	36
University of Georgia	95	Pennsylvania State University-Main Campus	36
Temple University	90	University of California-Berkeley	35
University of Sarasota	76	University of California-Los Angeles	35
University of Illinois-Urbana/Champaign	76	University of Pennsylvania	35
Northern Illinois University	75	University of Southern California	34
Florida State University	74	University of Colorado-Boulder	34
Indiana University-Bloomington	72	Ohio State University-Main Campus	34
University of Pittsburgh-Main Campus	69	Indiana University-Bloomington	32
University of Missouri-Columbia	65	University of Michigan-Ann Arbor	31
North Carolina State University-Raleigh	65	University of North Carolina-Chapel Hill	31
University of Houston-University Park	65	University of Alabama	29
University of California-Los Angeles	64	Walden University	29

*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 4. Distribution of doctorate institutions and doctoral degrees by Carnegie classification

Carnegie Category	Number of Institutions	Number of Ph.D.s	Percent of all Ph.D.s	Average Number of Ph.D.s per Institution
Research I	89	28,861	67.6	324
Research II	37	4,799	11.2	130
Doctoral I	50	4,486	10.5	90
Doctoral II	58	2,061	4.8	36
Other	153	2,476	5.8	16

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates and a Classification of Institutions of Higher Education, 1994 Edition, The Carnegie Foundation for Advancement of Teaching.

Research Universities I: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, and give high priority to research. They award 50 or more doctoral degrees each year. In addition, they receive annually \$40 million or more in federal support.

Research Universities II: These institutions offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, and give high priority to research. They award 50 or more doctoral degrees each year. In addition, they receive annually between \$15.5 million and \$40 million in federal support.

Doctoral Universities I: These institutions offer a full range of baccalaureate programs and are committed to graduate education through the doctorate. They award at least 40 doctoral degrees annually in five or more disciplines.

Doctoral Universities II: These institutions offer a full range of baccalaureate programs and are committed to graduate education through the doctorate. They award annually at least 10 doctoral degrees – in three or more disciplines – or 20 or more doctoral degrees in one or more disciplines.

Other: Specialized Institutions; Master's (Comprehensive) Colleges and Universities I; Master's (Comprehensive) Colleges and Universities II; Baccalaureate (Liberal Arts) Colleges I; Baccalaureate Colleges II.

Table 5. Major field of doctorate recipients for selected years, 1968-1998

Field	1968	1973	1978	1983	1988	1993	1998
All Fields	22,937	33,755	30,875	31,281	33,500	39,801	42,683
Physical Sciences*	4,653	5,311	4,193	4,425	5,309	6,496	6,739
Engineering	2,855	3,364	2,423	2,781	4,187	5,698	5,919
Life Sciences	3,707	5,168	5,041	5,553	6,164	7,395	8,540
Social Sciences	3,495	5,757	6,038	6,096	5,781	6,545	7,075
Humanities	3,467	5,414	4,231	3,500	3,555	4,482	5,499
Education	4,029	7,238	7,194	7,174	6,362	6,689	6,559
Professional/Other Fields	731	1,503	1,755	1,752	2,142	2,496	2,352
Physical Sciences							
Physics & Astronomy	1,436	1,589	1,067	1,043	1,302	1,544	1,584
Chemistry	1,803	1,855	1,544	1,758	2,015	2,137	2,217
Earth, Atmos., & Marine Science	443	634	623	637	728	789	838
Mathematics	971	1,232	838	701	749	1,146	1,177
Computer Sciences†	0	1	121	286	515	880	923
Life Sciences							
Biological Sciences	2,827	3,648	3,516	3,741	4,111	5,092	5,848
Health Sciences	196	486	512	639	882	1,197	1,500
Agricultural Sciences	684	1,034	1,013	1,173	1,171	1,106	1,192
Social Sciences							
Psychology	1,464	2,458	3,055	3,347	3,074	3,420	3,681
Anthropology	138	326	399	373	325	342	425
Economics	747	942	800	813	852	930	998
Political Sci./International Rel.	580	908	695	473	469	609	759
Sociology	370	599	610	525	449	513	549
Other Social Sciences	196	524	479	565	612	731	663
Humanities							
History	741	1,216	852	616	603	726	988
English Language & Literature	930	1,414	1,025	715	717	948	1,076
Foreign Language & Literature	526	917	637	504	430	576	642
Other Humanities	1,270	1,867	1,717	1,665	1,805	2,232	2,793
Education							
Teacher Education	493	675	551	483	473	428	339
Teaching Fields	984	1,536	1,352	1,327	989	943	951
Other Education	2,552	5,027	5,291	5,364	4,900	5,318	5,269
Professional/Other							
Business & Management	440	785	713	750	1,033	1,281	1,165
Communications	49	199	292	250	247	321	372
Other Professional Fields	203	446	736	730	812	867	721
Other Fields	39	73	14	22	50	27	94

*Includes mathematics and computer sciences.

†Computer sciences first appeared on the survey form in 1978.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 6. Doctorate recipients by selected subfield and percent female, 1988 and 1998

Subfield/Discipline	1988		1998		Percent Change in Number of Ph.D.s, 1988-1998
	Number of Ph.D.s	Percent Ph.D.s to Females	Number of Ph.D.s	Percent Ph.D.s to Females	
Mathematics	749	16.2	1,177	25.2	57.1
Computer Sciences	514	10.9	923	17.0	79.6
Physics & Astronomy	1,302	10.0	1,584	14.1	21.7
Chemistry	2,018	21.3	2,217	31.3	9.9
Earth, Atmos. & Marine Sci.	726	19.8	838	27.2	15.4
Biochemistry	613	33.1	798	43.7	30.2
Cell Biology	117	47.0	299	51.5	55.6
Ecology	155	30.1	292	39.0	88.4
Molecular Biology	362	35.6	741	43.7	104.7
Microbiology	333	36.0	384	44.0	15.3
Neuroscience	161	36.0	412	40.8	155.9
Health Sciences	867	62.6	1,500	67.1	73.0
Agricultural Sciences	1,170	18.5	1,192	28.3	1.9
Psychology	3,058	54.8	3,676	66.9	20.2
Anthropology	325	52.0	425	56.2	30.8
Economics	825	19.8	973	27.4	17.9
Political Science & Govt.	391	24.3	662	36.7	69.3
Sociology	449	53.0	549	55.4	22.3
History	603	36.0	988	39.0	63.8
Linguistics	166	50.0	219	56.2	31.9
Art History	132	61.4	220	75.0	66.7
Music	505	30.5	694	42.4	37.4
Philosophy	223	23.8	408	29.4	83.0
Language & Literature	1,146	56.6	1,718	57.9	49.9
Business & Management	1,039	23.8	1,165	32.3	12.1

See appendix table A-1.

Source: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 7. Sex of doctorate recipients by broad field for selected years, 1958-1998 (by number [N] and percent)

Field/Sex	1958		1963		1968		1973		1978		1983		1988		1993		1998	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
All Fields																		
Group Total	8,773	100.0	12,728	100.0	22,937	100.0	33,755	100.0	30,875	100.0	31,281	100.0	33,500*	100.0	39,801†	100.0	42,683‡	100.0
Male	7,782	88.7	11,336	89.1	20,005	87.2	27,670	82.0	22,553	73.0	20,748	66.3	21,680	64.7	24,382	61.3	24,653	57.8
Female	991	11.3	1,392	10.9	2,932	12.8	6,085	18.0	8,322	27.0	10,533	33.7	11,819	35.3	15,122	38.0	17,856	41.8
Physical Sciences§																		
Group Total	1,890	100.0	2,910	100.0	4,653	100.0	5,311	100.0	4,193	100.0	4,425	100.0	5,309	100.0	6,496	100.0	6,739	100.0
Male	1,819	96.2	2,786	95.7	4,420	95.0	4,929	92.8	3,754	89.5	3,808	86.1	4,430	83.4	5,083	78.2	5,104	75.7
Female	71	3.8	124	4.3	233	5.0	382	7.2	439	10.5	617	13.9	879	16.6	1,342	20.7	1,600	23.7
Engineering																		
Group Total	629	100.0	1,357	100.0	2,855	100.0	3,364	100.0	2,423	100.0	2,781	100.0	4,187	100.0	5,698	100.0	5,919	100.0
Male	626	99.5	1,347	99.3	2,843	99.6	3,318	98.6	2,370	97.8	2,657	95.5	3,901	93.2	5,096	89.4	5,108	86.3
Female	3	0.5	10	0.7	12	0.4	46	1.4	53	2.2	124	4.5	286	6.8	522	9.2	769	13.0
Life Sciences																		
Group Total	1,622	100.0	2,083	100.0	3,707	100.0	5,168	100.0	5,041	100.0	5,553	100.0	6,164	100.0	7,395	100.0	8,540	100.0
Male	1,459	90.0	1,876	90.1	3,197	86.2	4,246	82.2	3,882	77.0	3,832	69.0	3,893	63.2	4,262	57.6	4,640	54.3
Female	163	10.0	207	9.9	510	13.8	922	17.8	1,159	23.0	1,721	31.0	2,271	36.8	3,086	41.7	3,876	45.4
Social Sciences																		
Group Total	1,568	100.0	2,027	100.0	3,495	100.0	5,757	100.0	6,038	100.0	6,096	100.0	5,780	100.0	6,545	100.0	7,075	100.0
Male	1,362	86.9	1,763	87.0	2,941	84.1	4,546	79.0	4,177	69.2	3,690	60.5	3,178	55.0	3,289	50.3	3,206	45.3
Female	206	13.1	264	13.0	554	15.9	1,211	21.0	1,861	30.8	2,406	39.5	2,602	45.0	3,229	49.3	3,838	54.2
Humanities																		
Group Total	1,362	100.0	1,842	100.0	3,467	100.0	5,414	100.0	4,231	100.0	3,500	100.0	3,555	100.0	4,482	100.0	5,499	100.0
Male	1,160	85.2	1,538	83.5	2,735	78.9	3,864	71.4	2,635	62.3	1,969	56.3	1,980	55.7	2,324	51.9	2,814	51.2
Female	202	14.8	304	16.5	732	21.1	1,550	28.6	1,596	37.7	1,531	43.7	1,575	44.3	2,128	47.5	2,675	48.6
Education																		
Group Total	1,491	100.0	2,137	100.0	4,029	100.0	7,238	100.0	7,194	100.0	7,174	100.0	6,362	100.0	6,689	100.0	6,559	100.0
Male	1,180	79.1	1,720	80.5	3,228	80.1	5,455	75.4	4,339	60.3	3,555	49.6	2,848	44.8	2,748	41.1	2,422	36.9
Female	311	20.9	417	19.5	801	19.9	1,783	24.6	2,855	39.7	3,619	50.4	3,514	55.2	3,921	58.6	4,120	62.8
Professional/Other																		
Group Total	211	100.0	372	100.0	731	100.0	1,503	100.0	1,755	100.0	1,752	100.0	2,142	100.0	2,496	100.0	2,352	100.0
Male	176	83.4	306	82.3	641	87.7	1,312	87.3	1,396	79.5	1,237	70.6	1,450	67.7	1,580	63.3	1,359	57.8
Female	35	16.6	66	17.7	90	12.3	191	12.7	359	20.5	515	29.4	692	32.3	894	35.8	978	41.6

*Total includes 1 individual of unknown sex.

†Total includes 297 individuals of unknown sex.

‡Total includes 174 individuals of unknown sex.

§Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 8. Race/ethnicity of U.S. citizen doctorate recipients by broad field for selected years, 1978-1998

Field	Race/Ethnicity	1978	1983	1988	1993	1998
All Fields	Group Total	25,291	24,360	23,290	26,449	28,218
	Known Race/Ethnicity	23,778	23,740	22,907	26,217	27,352
	Asian*	390	492	614	891	1,168
	Black	1,031	922	818	1,111	1,467
	Hispanic	486	539	595	834	1,190
	American Indian†	60	81	94	120	189
	White	21,811	21,706	20,786	23,261	23,338
Physical Sciences‡	Group Total	3,200	3,138	3,238	3,477	3,660
	Known Race/Ethnicity	2,947	3,024	3,150	3,433	3,532
	Asian*	81	93	112	182	190
	Black	51	26	34	41	82
	Hispanic	30	37	70	87	102
	American Indian†	5	9	11	11	19
	White	2,780	2,859	2,923	3,112	3,139
Engineering	Group Total	1,261	1,163	1,780	2,228	2,543
	Known Race/Ethnicity	1,168	1,119	1,738	2,208	2,461
	Asian*	63	66	141	217	244
	Black	9	19	19	41	76
	Hispanic	20	18	43	56	100
	American Indian†	2	0	4	2	13
	White	1,074	1,016	1,531	1,892	2,028
Life Sciences	Group Total	4,030	4,437	4,406	4,830	5,288
	Known Race/Ethnicity	3,794	4,335	4,342	4,786	5,153
	Asian*	90	132	128	217	291
	Black	73	64	72	123	163
	Hispanic	47	48	85	126	212
	American Indian†	8	8	18	14	25
	White	3,576	4,083	4,039	4,306	4,462
Social Sciences	Group Total	5,118	5,048	4,349	4,951	5,312
	Known Race/Ethnicity	4,815	4,910	4,283	4,914	5,130
	Asian*	52	64	85	104	172
	Black	170	185	163	205	277
	Hispanic	93	137	134	182	293
	American Indian†	6	12	12	19	42
	White	4,494	4,512	3,889	4,404	4,346
Humanities	Group Total	3,780	2,984	2,795	3,510	4,241
	Known Race/Ethnicity	3,560	2,903	2,751	3,470	4,101
	Asian*	29	35	37	60	112
	Black	80	73	77	95	150
	Hispanic	111	96	93	130	157
	American Indian†	8	6	7	13	22
	White	3,332	2,693	2,537	3,172	3,660
Education	Group Total	6,498	6,246	5,300	5,791	5,529
	Known Race/Ethnicity	6,175	6,143	5,238	5,762	5,382
	Asian*	57	74	82	85	102
	Black	585	493	373	516	619
	Hispanic	157	181	151	213	277
	American Indian†	29	45	36	51	50
	White	5,347	5,350	4,596	4,897	4,334
Professional/Other	Group Total	1,404	1,344	1,422	1,662	1,645
	Known Race/Ethnicity	1,319	1,306	1,405	1,644	1,593
	Asian*	18	28	29	26	57
	Black	63	62	80	90	100
	Hispanic	28	22	19	40	49
	American Indian†	2	1	6	10	18
	White	1,208	1,193	1,271	1,478	1,369

*Includes Pacific Islander.

†Includes Alaskan Native.

‡Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 9. Major field of U.S. citizen Ph.D.s by race/ethnicity, 1998

Field	Total U.S. Citizen Ph.D.s	Number with Known	U.S. Citizens by Race/Ethnicity				
			Asian*	Black	His- panic	Amer. Indian†	White
All Fields	28,218	27,352	1,168	1,467	1,190	189	23,338
Physical Sciences	3,660	3,532	190	82	102	19	3,139
Physics & Astronomy	832	799	48	11	15	3	722
Chemistry	1,275	1,240	71	39	34	7	1,089
Earth, Atmos., & Marine Science	513	496	6	8	15	3	464
Mathematics	573	552	25	12	25	3	487
Computer Sciences	467	445	40	12	13	3	377
Engineering	2,543	2,461	244	76	100	13	2,028
Life Sciences	5,288	5,153	291	163	212	25	4,462
Biological Sciences	3,726	3,630	250	98	150	12	3,120
Health Sciences	1,035	1,010	32	57	36	4	881
Agricultural Sciences	527	513	9	8	26	9	461
Social Sciences	5,312	5,130	172	277	293	42	4,346
Psychology	3,167	3,048	93	149	197	31	2,578
Anthropology	325	302	9	10	19	5	259
Economics	409	400	29	12	18	0	341
Political Sci./International Rel.	578	567	17	36	27	3	484
Sociology	407	396	13	36	13	3	331
Other Social Sciences	426	417	11	34	19	0	353
Humanities	4,241	4,101	112	150	157	22	3,660
History	830	795	23	33	25	5	709
English Language & Lit.	946	920	20	30	28	4	838
Foreign Language & Lit.	405	390	6	4	52	3	325
Other Humanities	2,060	1,996	63	83	52	10	1,788
Education	5,529	5,382	102	619	277	50	4,334
Teacher Education	288	265	4	21	10	4	226
Teaching Fields	752	740	14	57	37	7	625
Other Education	4,489	4,377	84	541	230	39	3,483
Professional/Other	1,645	1,593	57	100	49	18	1,369
Business & Management	765	736	26	39	20	9	642
Communications	289	283	7	21	7	2	246
Other Professional Fields	566	553	24	39	21	7	462
Other Fields	25	21	0	1	1	0	19

NOTE: See technical notes in appendix C for the rate of nonresponse to the survey question on race/ethnicity.

*Asian includes Pacific Islander.

†American Indians includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 10. Leading doctorate-granting institutions of U.S. minority Ph.D.s, 1994-1998

Institution	Number of Ph.D.s	Institution	Number of Ph.D.s
Asian*			
University of California-Berkeley	291	University of Texas-Austin	176
University of California-Los Angeles	268	Puerto Rico-Rio Piedras	154
Stanford University	194	University of California-Berkeley	137
Harvard University	136	University of California-Los Angeles	114
Massachusetts Institute of Technology	134	Caribbean Center for Advanced Studies, PR	112
University of Michigan-Ann Arbor	133	Texas A&M University-College Station	111
University of Illinois-Urbana/Champaign	128	Stanford University	94
University of Southern California	122	Harvard University	86
University of California-Davis	104	Arizona State University-Main Campus	85
Columbia University, NYC	97	University of Arizona	79
Purdue University-Main Campus	90	University of Miami	78
University of Washington	81	University of Michigan-Ann Arbor	75
University of Wisconsin-Madison	81	University of New Mexico	75
University of Hawaii-Manoa	79	University of Southern California	72
Northwestern University	76	Nova Southeastern University	66
Yale University	75	University of California-Davis	64
University of California-San Diego	73	New York University	64
University of Texas-Austin	68	Pennsylvania State University Main Campus	64
University of Chicago	67	University of Colorado-Boulder	62
University of Maryland-College Park	67	University of Wisconsin-Madison	62
<i>Top 20 Institutions</i>	2,364	<i>Top 20 Institutions</i>	1,830
<i>Total Institutions Reported (311)</i>	5,645	<i>Total Institutions Reported (304)</i>	4,990
Black			
Nova Southeastern University	272	American Indian†	
Howard University	224	University of Oklahoma-Norman	28
University of Michigan Ann Arbor	140	Oklahoma State University-Main Campus	27
Ohio State University-Main Campus	128	Pennsylvania State University-Main Campus	17
Wayne State University	119	University of Washington	15
University of Maryland-College Park	118	University of Arizona	14
Clark Atlanta University	106	University of California-Berkeley	14
Virginia Polytechnic Institute & State University	105	University of California-Los Angeles	14
Teachers College at Columbia University, NYC	104	University of Michigan-Ann Arbor	14
Temple University	100	Stanford University	14
Florida State University	99	University of Arkansas-Fayetteville	13
North Carolina State University-Raleigh	86	Harvard University	12
University of Illinois-Urbana/Champaign	82	Michigan State University	11
Walden University	79	North Carolina State University-Raleigh	11
Michigan State University	78	University of Texas-Austin	11
University of California-Berkeley	77	University of Wisconsin-Madison	11
University of North Carolina-Chapel Hill	75	University of Georgia	10
University of South Carolina-Columbia	75	University of Missouri-Columbia	9
University of Texas-Austin	74	University of New Mexico	9
University of California-Los Angeles	71	University of North Dakota-Main Campus	9
<i>Top 20 Institutions</i>	2,212	<i>Top 20 Institutions</i>	272
<i>Total Institutions Reported (310)</i>	6,528	<i>Total Institutions Reported (217)</i>	833

*Includes Pacific Islander.

†Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 11. Citizenship status of doctorate recipients by broad field for selected years, 1968-1998

Field/Citizenship	1968	1973	1978	1983	1988	1993	1998
All Fields	22,937	33,755	30,875	31,281	33,500	39,801	42,683
U.S. Citizen	19,229	27,914	25,291	24,360	23,290	26,449	28,218
Non-U.S., Permanent Visa	1,046	1,998	1,344	1,274	1,622	2,259	2,696
Non-U.S., Temporary Visa	2,268	3,174	3,421	4,498	6,195	9,932	8,642
Unknown	394	669	819	1,149	2,393	1,161	3,127
Physical Sciences*	4,653	5,311	4,193	4,425	5,309	6,496	6,739
U.S. Citizen	3,865	4,101	3,200	3,138	3,238	3,477	3,660
Non-U.S., Permanent Visa	187	433	257	223	252	456	551
Non-U.S., Temporary Visa	510	683	646	925	1,483	2,363	2,041
Unknown	91	94	90	139	336	200	487
Engineering	2,855	3,364	2,423	2,781	4,187	5,698	5,919
U.S. Citizen	2,105	2,142	1,261	1,163	1,780	2,228	2,543
Non-U.S., Permanent Visa	273	557	325	319	366	469	478
Non-U.S., Temporary Visa	436	622	768	1,170	1,721	2,784	2,392
Unknown	41	43	69	129	320	217	506
Life Sciences	3,707	5,168	5,041	5,553	6,164	7,395	8,540
U.S. Citizen	2,894	4,062	4,030	4,437	4,406	4,830	5,288
Non-U.S., Permanent Visa	186	367	215	190	305	419	732
Non-U.S., Temporary Visa	585	649	668	776	1,069	1,988	1,946
Unknown	42	90	128	150	384	158	574
Social Sciences	3,495	5,757	6,038	6,096	5,781	6,545	7,075
U.S. Citizen	2,961	4,885	5,118	5,048	4,349	4,951	5,312
Non-U.S., Permanent Visa	149	236	211	191	223	323	299
Non-U.S., Temporary Visa	310	519	488	570	709	1,075	912
Unknown	75	117	221	287	500	196	552
Humanities	3,467	5,414	4,231	3,500	3,555	4,482	5,499
U.S. Citizen	3,105	4,817	3,780	2,984	2,795	3,510	4,241
Non-U.S., Permanent Visa	147	232	139	118	168	267	338
Non-U.S., Temporary Visa	152	251	198	258	350	572	537
Unknown	63	114	114	140	242	133	383
Education	4,029	7,238	7,194	7,174	6,362	6,689	6,559
U.S. Citizen	3,736	6,724	6,498	6,246	5,300	5,791	5,529
Non-U.S., Permanent Visa	54	105	128	148	177	177	171
Non-U.S., Temporary Visa	184	290	412	555	481	546	424
Unknown	55	119	156	225	404	175	435
Professional/Other	731	1,503	1,755	1,752	2,142	2,496	2,352
U.S. Citizen	563	1,183	1,404	1,344	1,422	1,662	1,645
Non-U.S., Permanent Visa	50	68	69	85	131	148	127
Non-U.S., Temporary Visa	91	160	241	244	382	604	390
Unknown	27	92	41	79	207	82	190

*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 12. Top 30 countries of origin of non-U.S. citizens earning doctorates at U.S. colleges and universities, 1998 (ranked by number of Ph.D.s)

Country	Number of Ph.D.s	Country	Number of Ph.D.s
1. China, Peoples Republic of	2,571	16. Italy	115
2. India	1,259	17. Romania	104
3. China, Republic of (Taiwan)	1,100	18. Hong Kong	100
4. Korea	1,027	19. Iran	97
5. Canada	448	20. Spain	95
6. Germany	288	21. Argentina	94
7. Russia	216	22. Egypt	88
8. Japan	205	{ 23. Yugoslavia	79
9. Mexico	192	23. Jordan	79
10. Brazil	186	25. Australia	77
11. Great Britain, UK	182	{ 26. Israel	76
12. Turkey	180	26. Venezuela	76
13. Thailand	169	28. Indonesia	73
14. Greece	128	29. Philippines	67
15. France	116	30. Malaysia	66

Top 30 Countries of Origin 9,371
Total Countries Reported (169) 42,683

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 13. Leading doctorate-granting institutions of non-U.S. citizen Ph.D.s, 1998 (ranked by number of Ph.D.s)

Institution	Number of Ph.D.s	Institution	Number of Ph.D.s
University of Texas-Austin	249	Pennsylvania State University-Main Campus	179
University of Minnesota-Twin Cities	241	Columbia University, New York City	174
University of Wisconsin-Madison	224	University of Florida	171
Texas A&M University-College Station	223	University of California-Berkeley	169
Ohio State University-Main Campus	221	Harvard University	169
Purdue University-Main Campus	215	University of California-Los Angeles	149
University of Michigan-Ann Arbor	208	University of Southern California	141
Stanford University	203	Iowa State University	136
University of Illinois-Urbana/Champaign	188	University of Maryland-College Park	136
Cornell University-Endowed Colleges	186	University of Pittsburgh-Main Campus	132
		Top 20 Institutions	3,714
		Total Institutions Reported (335)	11,338

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 14. Leading doctorate-granting institutions of non-U.S. citizen Ph.D.s, 1998 (ranked by percentage of Ph.D.s*)

Institution	Percent of Ph.D.s†	Institution	Percent of Ph.D.s†
New Jersey Institute of Technology	87.1	University of Medicine and Dentistry of New Jersey	52.4
Clarkson University	77.3	Michigan Technological University	51.0
North Dakota State University-Main Campus	74.2	Carnegie Mellon University	50.5
Polytechnic University	69.2	Medical College of Georgia	50.0
Rockefeller University	62.5	University of Texas Health Science-San Antonio	50.0
Illinois Institute of Technology	58.7	SUNY at Stony Brook	46.6
University of Missouri-Rolla	57.4	Colorado School of Mines	45.9
Florida Institute of Technology	55.0	University of Texas Health Science Center	45.5
Drexel University	53.8	Iowa State University	45.3
University of Maryland-Baltimore County	52.7	Northeastern University	43.7

* The ranking excludes institutions with fewer than 10 non-U.S. citizen Ph.D.s.

†The percent column is based on the number of non-U.S. citizens as a percentage of the total Ph.D.s for that institution.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 15. Parental educational attainment of 1998 doctorate recipients

	Percent High School or Less	Percent College	Percent Advanced Degree
Total			
Father's Education	28.3	31.4	40.3
Mother's Education	37.1	35.0	27.9
Sex			
Male			
Father's Education	29.0	31.5	39.4
Mother's Education	39.2	34.1	26.7
Female			
Father's Education	27.5	31.6	40.9
Mother's Education	34.5	36.6	28.9
Race/Ethnicity (U.S. citizens only)			
Asian*			
Father's Education	31.9	40.4	27.7
Mother's Education	50.1	34.0	15.9
Black			
Father's Education	53.1	22.5	24.3
Mother's Education	51.9	26.9	21.3
Hispanic			
Father's Education	40.9	26.0	33.1
Mother's Education	52.6	28.6	18.9
American Indian†			
Father's Education	38.6	31.7	29.6
Mother's Education	41.3	38.1	20.6
White			
Father's Education	27.0	32.6	40.3
Mother's Education	34.3	39.7	26.0
Citizenship			
U.S. Citizen			
Father's Education	27.9	32.2	39.9
Mother's Education	34.0	39.9	26.1
Non-U.S., Permanent Visa			
Father's Education	33.0	35.4	31.6
Mother's Education	48.5	31.7	19.8
Non-U.S., Temporary Visa			
Father's Education	34.8	36.3	28.9
Mother's Education	52.5	30.3	17.2
Broad Field of Study			
Physical Sciences‡			
Father's Education	23.4	33.3	43.3
Mother's Education	33.4	35.9	30.7
Engineering			
Father's Education	25.8	36.5	37.7
Mother's Education	40.0	36.0	24.1
Life Sciences			
Father's Education	27.1	32.4	40.5
Mother's Education	36.3	36.6	27.1
Social Sciences			
Father's Education	24.2	30.1	45.7
Mother's Education	32.1	35.4	32.5
Humanities			
Father's Education	24.0	29.5	46.5
Mother's Education	31.7	36.4	31.9
Education			
Father's Education	43.8	27.1	29.1
Mother's Education	48.1	30.2	21.6
Professional/Other Fields			
Father's Education	32.0	30.4	37.6
Mother's Education	40.8	32.8	26.4

*Includes Pacific Islander.

†Includes Alaskan Native.

‡Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 16. Median number of years from baccalaureate to doctorate award by broad field for selected years, 1973-1998

Field	1973	1978	1983	1988	1993	1998
All Fields						
Total	8.5	9.0	9.9	10.6	10.7	10.4
Registered	6.0	6.2	6.7	7.0	7.2	7.3
Physical Sciences*						
Total	6.9	7.0	7.2	7.6	8.4	8.0
Registered	5.9	5.9	6.0	6.2	6.6	6.7
Engineering						
Total	7.9	7.6	8.0	8.1	9.0	8.9
Registered	5.8	5.7	5.9	6.0	6.4	6.7
Life Sciences						
Total	7.2	7.4	8.0	9.0	9.5	9.1
Registered	5.7	5.9	6.2	6.7	7.0	7.0
Social Sciences						
Total	7.8	8.2	9.5	10.6	10.6	9.9
Registered	5.9	6.1	7.0	7.5	7.6	7.5
Humanities						
Total	9.2	10.2	11.2	12.2	12.0	11.6
Registered	6.5	7.4	8.0	8.5	8.3	8.7
Education						
Total	12.6	12.9	14.1	17.0	19.3	20.0
Registered	6.2	6.6	7.5	8.0	8.3	8.4
Professional/Other						
Total	10.0	10.9	12.1	13.0	13.3	13.7
Registered	6.0	6.2	7.0	7.5	7.6	8.0

*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 17. Median number of years from baccalaureate to doctorate award by demographic group and broad field, 1998

	All Fields	Physical Sciences*	Engineering	Life Sciences	Social Sciences	Humanities	Education	Prof./ Other
Elapsed Time from Baccalaureate (years)								
All Ph.D.s	10.4	8.0	8.9	9.1	9.9	11.6	20.0	13.7
Sex								
Male	9.9	8.0	9.0	9.0	10.0	11.3	18.9	13.1
Female	11.3	7.8	8.0	9.4	9.6	11.9	20.6	14.6
Citizenship								
U.S. Citizen	10.7	7.2	8.0	8.9	9.6	11.7	21.0	15.3
Non-U.S., Permanent Visa	11.4	11.2	11.0	10.9	11.4	12.2	14.3	12.8
Non-U.S., Temporary Visa	9.5	8.9	9.1	9.4	10.0	10.4	12.5	10.7
Unknown	11.2	9.8	10.9	11.2	11.5	12.0	16.2	11.5
Race/Ethnicity (U.S. citizens only)								
Asian†	8.2	7.0	7.6	8.0	8.4	9.5	16.0	12.0
Black	14.0	7.9	8.5	9.3	10.5	11.1	21.0	17.8
Hispanic	11.0	8.0	8.0	9.6	9.8	11.0	18.9	17.2
American Indian‡	11.3	7.5	7.0	7.7	10.0	12.0	16.3	10.0
White	10.7	7.1	8.0	8.9	9.6	11.9	21.0	15.3
Registered Time from Baccalaureate (years)								
All Ph.D.s	7.3	6.7	6.7	7.0	7.5	8.7	8.4	8.0
Sex								
Male	7.2	6.8	6.7	7.0	7.6	8.3	8.4	7.9
Female	7.6	6.5	6.5	7.0	7.4	9.0	8.4	8.0
Citizenship								
U.S. Citizen	7.5	6.5	6.6	7.0	7.4	8.8	8.6	8.0
Non-U.S., Permanent Visa	7.9	7.8	7.3	7.5	8.3	9.0	8.3	8.4
Non-U.S., Temporary Visa	7.0	6.9	6.7	7.0	7.5	8.0	7.0	7.4
Unknown	7.3	7.2	7.1	7.1	8.9	9.9	8.8	7.5
Race/Ethnicity (U.S. citizens only)								
Asian†	7.0	6.6	6.6	7.0	6.9	8.1	8.2	7.3
Black	7.9	6.3	7.0	7.0	8.0	8.0	8.0	8.4
Hispanic	7.7	6.6	6.2	7.5	7.4	8.4	9.0	7.3
American Indian‡	7.5	7.3	6.4	6.1	8.0	8.1	8.3	8.1
White	7.5	6.5	6.5	7.0	7.4	8.9	8.7	8.0

*Includes mathematics and computer sciences.

†Includes Pacific Islander.

‡Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 18. Distribution of 1998 doctorate recipients by age at doctorate (in years)

	Age Grouping					
	21-25	26-30	31-35	36-40	41-45	Over 45
Total	60	9,890	9,859	5,143	3,265	5,218
Broad Field						
Physical Sciences*	33	2,640	1,620	596	252	152
Engineering	12	1,929	1,647	645	193	129
Life Sciences	7	2,408	2,280	957	566	513
Social Sciences	3	1,688	1,706	857	478	727
Humanities	2	710	1,468	868	508	695
Education	0	288	680	810	992	2,557
Professional/Other Fields	3	227	458	410	276	445
Sex						
Male	45	6,133	6,284	3,157	1,669	1,976
Female	15	3,756	3,575	1,986	1,596	3,242
Citizenship						
U.S. Citizen	25	7,118	5,619	3,415	2,570	4,771
Non-U.S., Permanent Visa	9	408	876	452	248	148
Non-U.S., Temporary Visa	24	2,214	3,022	1,102	379	200
Unknown	2	150	342	174	68	99
Race/Ethnicity (U.S. citizens only)						
Asian†	4	472	238	115	57	84
Black	0	225	230	182	181	396
Hispanic	0	233	244	172	128	191
American Indian‡	0	31	47	26	23	34
White	20	6,022	4,735	2,832	2,121	3,979

*Includes mathematics and computer sciences.

†Includes Pacific Islander.

‡Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 19. Primary sources of financial support for doctorate recipients by broad field and demographic group, 1998 (includes only Ph.D.s who reported primary source of support)

Primary Source of Support	All Ph.D.s	Male	Female	U.S. Citizens by Race/Ethnicity								
				U.S. Citizen	Permanent Visa	Temporary Visa	Asian*	Black	Hispanic	American Indian†		
All Fields	N	42,683	24,653	17,856	28,218	2,696	8,642	1,168	1,467	1,190	189	23,338
Teaching Assistantships	%	17.8	18.2	17.3	16.1	22.8	21.4	12.9	6.8	12.2	13.8	17.0
Research Assistantships/Traineeships	%	26.5	31.7	19.3	20.5	37.7	42.1	32.2	8.7	13.1	15.6	21.1
Fellowships/Dissertation Grants	%	16.3	16.0	16.7	17.4	14.2	13.6	26.4	30.8	28.3	24.0	15.4
Own Resources	%	32.2	25.8	41.1	40.1	20.2	11.3	24.2	46.1	40.1	41.9	40.6
Foreign Government	%	2.5	3.4	1.4	0.1	2.1	9.7	0.3	1.1	0.6	0.1	
Employer	%	3.1	3.5	2.7	4.0	1.7	1.1	2.0	5.7	3.1	3.0	4.0
Other	%	1.6	1.5	1.6	1.8	1.3	0.9	2.0	1.9	2.1	1.2	1.8
Physical Sciences‡	N	6,739	5,104	1,600	3,660	551	2,041	190	82	102	19	3,139
Teaching Assistantships	%	27.1	26.5	29.4	22.9	30.9	33.4	21.7	10.5	15.5	16.7	23.6
Research Assistantships/Traineeships	%	43.6	44.5	40.6	41.2	48.3	46.7	46.1	23.7	28.9	38.9	41.9
Fellowships/Dissertation Grants	%	13.9	13.4	15.7	17.8	7.4	9.2	18.9	50.0	34.0	16.7	16.2
Own Resources	%	10.5	10.4	10.7	14.4	10.7	3.7	11.1	10.5	15.5	27.8	14.6
Foreign Government	%	2.3	2.5	1.5	0.1	0.8	6.1	0.0	0.0	3.1	0.0	0.0
Employer	%	1.9	2.0	1.5	2.7	1.6	0.6	1.1	3.9	2.1	0.0	2.8
Other	%	0.7	0.7	0.6	0.9	0.4	0.4	1.1	1.3	1.0	0.0	0.7
Engineering	N	5,919	5,108	769	2,543	478	2,392	244	76	100	13	2,028
Teaching Assistantships	%	9.5	9.4	10.1	6.8	13.5	11.1	7.7	7.1	8.6	0.0	6.5
Research Assistantships/Traineeships	%	52.2	52.1	52.5	44.0	57.2	60.3	53.8	14.3	32.3	33.3	44.5
Fellowships/Dissertation Grants	%	13.4	12.3	20.7	21.1	6.4	6.9	18.8	55.7	31.2	41.7	19.6
Own Resources	%	13.6	14.3	8.7	17.5	13.0	9.6	12.0	12.9	15.1	16.7	18.5
Foreign Government	%	5.2	5.3	4.4	0.1	4.8	10.0	0.4	0.0	2.2	0.0	0.0
Employer	%	4.9	5.3	2.5	8.3	3.4	1.8	4.7	8.6	9.7	8.3	8.7
Other	%	1.3	1.3	1.2	2.1	1.6	0.3	2.6	1.4	1.1	0.0	2.3
Life Sciences	N	8,540	4,640	3,876	5,288	732	1,946	291	163	212	25	4,462
Teaching Assistantships	%	11.9	12.5	11.2	11.1	12.6	13.7	5.9	4.5	6.9	4.5	12.0
Research Assistantships/Traineeships	%	40.4	43.4	36.8	36.0	52.9	48.0	39.9	23.4	26.2	45.5	36.6
Fellowships/Dissertation Grants	%	22.9	22.4	23.5	24.8	21.0	18.8	37.4	46.1	38.6	40.9	22.5
Own Resources	%	18.3	14.3	23.0	23.7	11.0	6.6	13.9	22.1	22.8	0.0	24.5
Foreign Government	%	3.2	4.2	2.1	0.3	1.3	11.2	0.4	0.0	3.0	0.0	0.1
Employer	%	1.8	1.8	1.9	2.5	0.4	0.6	1.1	3.2	1.0	9.1	2.5
Other	%	1.4	1.3	1.6	1.6	0.7	1.1	1.5	0.6	1.5	0.0	1.7
Social Sciences	N	7,075	3,206	3,838	5,312	299	912	172	277	293	42	4,346
Teaching Assistantships	%	20.4	23.0	18.2	18.4	30.0	28.5	20.5	9.9	12.3	18.8	19.2
Research Assistantships/Traineeships	%	14.0	13.6	14.4	13.8	12.6	15.4	13.7	8.7	7.4	9.4	14.7
Fellowships/Dissertation Grants	%	17.4	19.0	16.0	16.6	17.0	21.5	26.7	38.7	29.9	25.0	14.0
Own Resources	%	43.0	37.3	47.9	48.1	33.7	19.0	38.5	39.9	45.1	43.8	49.2
Foreign Government	%	2.0	3.4	0.8	0.1	2.2	12.2	0.0	0.0	0.4	3.1	0.1
Employer	%	1.7	1.9	1.4	1.8	1.9	1.1	0.0	2.0	3.3	0.0	1.7
Other	%	1.4	1.7	1.2	1.1	2.6	2.5	0.6	0.8	1.6	0.0	1.2
Humanities	N	5,499	2,814	2,675	4,241	338	537	112	150	157	22	3,660
Teaching Assistantships	%	32.4	31.6	33.1	31.0	41.3	37.0	18.1	14.7	36.1	31.8	31.9
Research Assistantships/Traineeships	%	1.7	1.9	1.4	1.5	1.9	2.8	1.0	2.1	0.7	0.0	1.6
Fellowships/Dissertation Grants	%	23.3	22.9	23.6	23.0	20.5	27.0	40.0	46.9	34.7	22.7	20.9
Own Resources	%	38.7	38.9	38.5	41.4	33.0	23.4	38.1	32.9	25.9	45.5	42.4
Foreign Government	%	1.1	1.2	1.1	0.1	1.3	8.4	0.0	0.0	0.0	0.0	0.1
Employer	%	1.4	1.9	0.9	1.6	0.3	0.6	1.0	1.4	1.4	0.0	1.6
Other	%	1.4	1.6	1.3	1.5	1.6	0.8	1.9	2.1	1.4	0.0	1.5
Education	N	6,559	2,422	4,120	5,529	171	424	102	619	277	50	4,334
Teaching Assistantships	%	7.4	7.0	7.7	6.3	18.4	16.2	8.1	3.6	3.2	2.3	6.8
Research Assistantships/Traineeships	%	5.7	5.6	5.8	4.7	11.2	15.9	4.7	3.4	2.4	4.5	5.0
Fellowships/Dissertation Grants	%	6.6	6.7	6.5	5.8	10.5	13.7	11.6	13.6	13.0	20.5	4.0
Own Resources	%	69.0	66.9	70.3	72.3	48.0	38.2	65.1	68.1	74.1	68.2	72.9
Foreign Government	%	1.1	1.7	0.6	0.0	4.6	11.9	0.0	0.0	0.0	0.0	0.0
Employer	%	7.2	9.0	6.2	7.8	3.9	2.0	5.8	8.9	3.2	2.3	8.1
Other	%	3.0	3.2	2.9	3.1	3.3	2.0	4.7	2.4	4.0	2.3	3.1
Professional/Other Fields	N	2,332	1,346	973	1,644	127	389	57	100	49	18	1,369
Teaching Assistantships	%	19.4	20.0	18.7	17.1	19.8	27.3	16.0	5.3	6.5	29.4	18.4
Research Assistantships/Traineeships	%	12.0	12.3	11.6	9.3	17.2	21.2	12.0	9.6	10.9	0.0	9.3
Fellowships/Dissertation Grants	%	12.6	12.5	12.7	11.6	15.5	15.7	26.0	27.7	17.4	5.9	9.6
Own Resources	%	46.9	44.4	50.3	54.1	40.5	20.9	38.0	45.7	56.5	52.9	55.2
Foreign Government	%	2.5	3.3	1.4	0.1	1.7	12.1	2.0	0.0	0.0	0.0	0.1
Employer	%	4.5	5.3	3.6	5.4	4.3	1.1	0.0	7.4	4.3	5.9	5.5
Other	%	2.1	2.2	1.8	2.3	0.9	1.7	6.0	4.3	4.3	5.9	2.0

Note: Table includes 174 Ph.D.s whose sex was not reported.

*Includes Pacific Islander.

†Includes Alaskan Native.

‡Includes mathematics and computer sciences

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 20. Postgraduation status of doctorate recipients by broad field for selected years, 1978-1998

		All Fields	Physical Sciences*	Engineering	Life Sciences	Social Sciences	Humanities	Educa-tion	Prof./Other
Total									
1978	N	30,875	4,193	2,423	5,041	6,038	4,231	7,194	1,755
1983	N	31,281	4,425	2,781	5,553	6,096	3,500	7,174	1,752
1989	N	33,500	5,309	4,187	6,164	5,781	3,555	6,362	2,142
1993	N	39,801	6,496	5,698	7,395	6,545	4,482	6,689	2,496
1998	N	42,683	6,739	5,919	8,540	7,075	5,499	6,559	2,352
Total Responses to Postgraduation Status									
1978	N	28,582	3,936	2,222	4,716	5,522	3,893	6,669	1,624
1983	N	28,719	4,080	2,479	5,136	5,537	3,197	6,681	1,609
1988	N	30,224	4,799	3,707	5,626	5,147	3,254	5,798	1,893
1993	N	36,546	5,947	5,165	6,877	6,009	4,159	6,116	2,273
1998	N	38,114	6,095	5,317	7,739	6,158	4,991	5,761	2,053
Definite Commitments for Employment or Study									
1978	%	72.9	76.0	76.0	76.5	70.9	61.5	73.0	85.1
1983	%	73.8	77.2	74.6	76.2	69.9	64.7	74.5	84.4
1988	%	73.5	76.3	67.3	76.4	71.7	64.9	75.7	82.2
1993	%	67.0	66.0	55.7	73.4	65.9	59.9	73.0	75.6
1998	%	69.6	71.5	69.7	71.8	67.9	58.8	73.5	76.3
Seeking Employment or Study									
1978	%	27.1	24.0	24.0	23.5	29.1	38.5	27.0	14.9
1983	%	26.2	22.8	25.4	23.8	30.1	35.3	25.5	15.6
1988	%	26.5	23.7	32.7	23.6	28.3	35.1	24.3	17.8
1993	%	33.0	34.0	44.3	26.6	34.1	40.1	27.0	24.4
1998	%	30.4	28.5	30.3	28.2	32.1	41.2	26.5	23.7

NOTE: Percentages are based on the number of Ph.D.s who reported their postgraduation status (definite or seeking), regardless of plans (employment or study). See technical notes in appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.

*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 21. Postgraduation status of doctorate recipients by demographic group for selected years, 1978-1998

	Total	Men	Women	U.S. Citizen	Perm. Visa	Temp. Visa	U.S. Citizens & Permanent Residents				
							Asian*	Black	Hispanic	American Indian†	White
Total											
1978	N	30,875	22,553	8,322	25,291	1,344	3,421	1,032	1,104	553	60
1983	N	31,281	20,748	10,533	24,360	1,274	4,498	1,042	1,005	608	82
1988	N	33,500	21,680	11,819	23,290	1,622	6,195	1,235	970	693	94
1993	N	39,801	24,382	15,122	26,449	2,259	9,932	2,017	1,280	973	120
1998	N	42,683	24,653	17,856	28,218	2,696	8,642	2,720	1,586	1,311	189
Total Responses to Postgraduation Status											
1978	N	28,582	20,941	7,641	24,109	1,261	3,167	977	1,027	516	56
1983	N	28,719	18,992	9,727	23,373	1,181	4,098	975	965	575	79
1988	N	30,224	19,429	10,795	22,843	1,527	5,795	1,161	939	676	92
1993	N	36,546	22,533	14,007	25,284	2,074	9,141	1,850	1,183	918	113
1998	N	38,114	22,104	15,975	26,640	2,538	8,164	2,571	1,473	1,201	173
Definite Commitments for Employment or Study											
1978	%	72.9	75.2	66.7	73.7	61.9	71.5	64.0	69.3	71.1	73.2
1983	%	73.8	75.8	69.8	74.9	64.2	70.4	66.3	69.2	73.0	57.0
1988	%	73.5	74.4	71.7	75.8	59.8	67.7	66.5	68.6	72.0	69.6
1993	%	67.0	66.2	68.3	71.5	53.3	57.8	59.2	65.2	68.2	67.3
1998	%	69.6	70.5	68.4	71.7	62.5	66.0	65.8	65.2	69.9	62.4
Seeking Employment or Study											
1978	%	27.1	24.8	33.3	26.3	38.1	28.5	36.0	30.7	28.9	26.8
1983	%	26.2	24.2	30.2	25.1	35.8	29.6	33.7	30.8	27.0	43.0
1988	%	26.5	25.6	28.3	24.2	40.2	32.3	33.5	31.4	28.0	30.4
1993	%	33.0	33.8	31.7	28.5	46.7	42.2	40.8	34.8	31.8	32.7
1998	%	30.4	29.5	31.6	28.3	37.5	34.0	34.2	34.8	30.1	37.6

NOTE: Percentages are based on the number of Ph.D.s who reported their postgraduation status (definite or seeking), regardless of plans (employment or study). See technical notes in Appendix C for rates of nonresponse to the applicable questions and for further explanation of postgraduation plans.

*Includes Pacific Islander.

†Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 22. Postgraduation commitments of doctorate recipients by type of plans and broad field for selected years, 1978-1998

		All Fields	Physical Sciences*	Engineering	Life Sciences	Social Sciences	Humanities	Education	Prof./ Other
All Definite Commitments									
1978	N	20,849	2,992	1,688	3,610	3,914	2,393	4,870	1,382
1983	N	21,186	3,150	1,850	3,913	3,869	2,068	4,978	1,358
1988	N	22,201	3,661	2,495	4,296	3,691	2,112	4,390	1,556
1993	N	24,481	3,925	2,876	5,046	3,960	2,491	4,464	1,719
1998	N	26,540	4,360	3,708	5,553	4,183	2,933	4,236	1,567
Definite Commitments with Response to Type of Plans									
1978	N	20,697	2,981	1,680	3,591	3,889	2,370	4,814	1,372
1983	N	21,139	3,144	1,844	3,909	3,862	2,062	4,966	1,352
1988	N	22,037	3,648	2,484	4,285	3,660	2,088	4,328	1,544
1993	N	24,363	3,917	2,867	5,034	3,941	2,465	4,429	1,710
1998	N	25,980	4,312	3,655	5,483	4,100	2,843	4,062	1,525
Employment									
1978	%	80.3	60.4	84.8	47.3	86.9	95.1	97.7	98.4
1983	%	79.3	61.9	87.5	44.8	86.1	95.3	97.4	97.2
1988	%	73.5	51.3	80.0	39.3	84.1	92.8	95.5	97.4
1993	%	71.0	50.1	74.7	35.8	79.9	92.9	96.9	97.1
1998	%	70.9	54.0	80.2	38.8	75.2	91.3	95.5	95.6
Study									
1978	%	19.7	39.6	15.2	52.7	13.1	4.9	2.3	1.6
1983	%	20.7	38.1	12.5	55.2	13.9	4.7	2.6	2.8
1988	%	26.5	48.7	20.0	60.7	15.9	7.2	4.5	2.6
1993	%	29.0	49.9	25.3	64.2	20.1	7.1	3.1	2.9
1998	%	29.1	46.0	19.8	61.2	24.8	8.7	4.5	4.4

NOTE: Only Ph.D.s with definite commitments are included. "All Definite Commitments" includes recipients who reported definite commitments but not type of plans (employment or study). Percentages are based on the number of Ph.D.s who reported a definite commitment and a type of plan. See technical notes in appendix C for rates of nonresponse to the applicable survey questions and for further explanation of postgraduation plans.

*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 23. Postgraduation commitments of doctorate recipients by type of plans and demographic group for selected years, 1978-1998

U.S. Citizens & Permanent Residents												
		Total	Men	Women	U.S. Citizen	Perm. Visa	Temp. Visa	Asian*	Black	Hispanic	American Indian†	White
All Definite Commitments												
1978	N	20,849	15,750	5,099	17,772	781	2,265	625	712	367	41	15,981
1983	N	21,186	14,398	6,788	17,496	758	2,885	646	668	420	45	16,192
1988	N	22,201	14,463	7,738	17,325	913	3,925	772	644	487	64	15,984
1993	N	24,481	14,919	9,560	18,067	1,105	5,283	1,096	771	626	76	16,511
1998	N	26,540	15,586	10,932	19,098	1,585	5,388	1,693	961	840	108	16,721
Definite Commitments with Responses to Type of Plans												
1978	N	20,697	15,648	5,049	17,667	775	2,227	617	700	366	41	15,899
1983	N	21,139	14,364	6,775	17,468	757	2,867	644	665	420	45	16,172
1988	N	22,037	14,365	7,672	17,207	904	3,889	765	638	481	63	15,880
1993	N	24,363	14,858	9,503	17,990	1,096	5,251	1,088	765	624	76	16,442
1998	N	25,980	15,303	10,658	18,708	1,552	5,279	1,670	914	819	105	16,403
Employment												
1978	%	80.3	79.2	83.6	80.9	78.1	75.8	71.2	93.9	89.3	90.2	80.6
1983	%	79.3	77.9	82.1	79.6	80.2	77.1	73.6	92.3	86.4	97.8	79.2
1988	%	73.5	71.6	77.0	75.7	71.6	64.4	70.1	87.6	73.4	82.5	75.4
1993	%	71.0	68.4	75.1	74.3	65.8	60.7	60.9	83.5	73.9	85.5	74.3
1998	%	70.9	69.6	72.7	74.5	62.8	60.5	61.6	83.2	75.0	81.9	74.2
Study												
1978	%	19.7	20.8	16.4	19.1	21.9	24.2	28.8	6.1	10.7	9.8	19.4
1983	%	20.7	22.1	17.9	20.4	19.8	22.9	26.4	7.7	13.6	2.2	20.8
1988	%	26.5	28.4	23.0	24.3	28.4	35.6	29.9	12.4	26.6	17.5	24.6
1993	%	29.0	31.6	24.9	25.7	34.2	39.3	39.1	16.5	26.1	14.5	25.7
1998	%	29.1	30.4	27.3	25.5	37.2	39.5	38.4	16.8	25.0	18.1	25.8

NOTE: Only Ph.D.s with definite commitments are included. "All Definite Commitments" includes recipients who reported definite commitments but not type of plans (employment or study). Percentages are based on the number of Ph.D.s who reported a definite commitment and a type of plan. See technical notes in Appendix C for rates of nonresponse to the applicable survey questions and for further explanation of postgraduation plans.

*Asian includes Pacific Islander.

†Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 24. Postdoctoral location of non-U.S. citizen doctorate recipients with postgraduation commitments by major field and visa status, 1998

Field	Number of Responses	Permanent Visa					Temporary Visa				
		U.S. Location		Foreign Location		Number of Responses	U.S. Location		Foreign Location		
		Employ.	Study	Employ.	Study		Employ.	Study	Employ.	Study	
All Fields	1,538	57.1	35.2	5.7	2.0	5,239	36.6	33.4	24.0	6.0	
Physical Sciences*	334	59.3	35.0	1.8	3.9	1,304	34.6	46.4	11.4	7.6	
Physics & Astronomy	84	47.6	42.9	1.2	8.3	1,436	27.8	52.8	6.0	13.4	
Chemistry	103	54.4	44.7	1.0	0.0	1,213	20.6	67.2	8.5	3.7	
Earth, Atmos., & Marine Sci.	39	51.3	41.0	5.1	2.6	546	33.1	42.5	14.2	10.2	
Mathematics	50	60.0	28.0	2.0	10.0	270	43.5	29.0	19.4	8.1	
Computer Sciences	58	89.7	8.6	1.7	0.0	217	65.1	16.7	15.1	3.1	
Engineering	290	81.7	14.5	3.1	0.7	253	54.0	21.7	21.0	3.3	
Life Sciences	456	25.0	70.4	2.9	1.8	335	12.4	59.4	20.8	7.4	
Biological Sciences	360	17.8	79.7	0.6	1.9	402	9.1	73.9	9.6	7.4	
Health Sciences	49	69.4	16.3	14.3	0.0	127	26.0	25.3	42.5	6.2	
Agricultural Sciences	47	34.0	55.3	8.5	2.1	248	15.2	32.8	43.8	8.2	
Social Sciences†	148	57.4	25.7	14.9	2.0	192	42.5	11.0	40.5	6.0	
Psychology	52	48.1	42.3	9.6	0.0	811	33.3	28.9	25.6	12.2	
Economics	44	65.9	11.4	20.5	2.3	146	51.4	3.9	41.8	2.8	
Political Sci./International Rel.	9	44.4	44.4	11.1	0.0	256	37.0	13.0	41.3	8.7	
Sociology	7	57.1	0.0	28.6	14.3	90	18.2	18.2	57.6	6.1	
Humanities	150	79.3	8.0	10.7	2.0	282	42.2	9.3	39.6	8.9	
Education	80	73.8	12.5	12.5	1.3	46	24.9	9.2	59.0	6.9	
Professional/Other‡	80	82.5	2.5	13.8	1.3	33	54.9	4.0	39.5	1.6	
Business & Management	51	86.3	2.0	11.8	0.0	183	62.8	3.8	31.7	1.6	

NOTE: Only non-U.S. citizen Ph.D.s with definite commitments are included. Percentages are based on the number of Ph.D.s who reported a definite commitment and a location. See technical notes in appendix C for rates of nonresponse to the applicable survey questions and for further explanation of postgraduation plans.

*Includes mathematics and computer sciences.

†Includes other fields not shown.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 25. Postdoctoral location of non-U.S. citizen doctorate recipients with postgraduation commitments by visa status for selected years, 1978-1998

		All Non-U.S. Citizen	Permanent Visa	Temporary Visa
All Definite Commitments				
1978	N	3,046	781	2,265
1983	N	3,643	758	2,885
1988	N	4,838	913	3,925
1993	N	6,388	1,105	5,283
1998	N	6,973	1,585	5,388
Definite Commitments with Response to Location				
1978	N	2,892	744	2,148
1983	N	3,375	696	2,679
1988	N	4,372	834	3,538
1993	N	6,311	1,100	5,211
1998	N	6,907	1,564	5,343
U.S. Location				
1978	%	52.4	92.1	38.6
1983	%	50.7	91.4	40.2
1988	%	61.0	85.0	55.3
1993	%	60.4	85.3	55.2
1998	%	74.8	92.3	69.6
Foreign Location				
1978	%	47.6	7.9	61.4
1983	%	49.3	8.6	59.8
1988	%	39.0	15.0	44.7
1993	%	39.6	14.7	44.8
1998	%	25.2	7.7	30.4

NOTE: Only non-U.S. citizen Ph.D.s with definite commitments are included. "All Definite Commitments" includes recipients who reported definite commitments but not location (U.S. or foreign). Percentages are based on the number of Ph.D.s who reported a definite commitment and a location.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

TABLE 26. Employment sector of doctorate recipients with postgraduation commitments in the United States by demographic group for selected years, 1978-1998

U.S. Citizens & Permanent Residents												
	Total	Male	Female	U.S. Citizen	Perm. Visa	Temp. Visa	Asian*	Black	Hispanic	Amer. Indian†	White	
All Employment Commitments												
1978	N	14,07	10,30	3,764	13,54	528	427	400	597	304	36	12,159
1983	N	13,24	8,527	4,714	12,73	505	626	415	523	321	38	11,767
1988	N	12,53	7,543	4,996	12,02	514	926	453	491	316	43	11,069
1993	N	13,64	7,272	6,374	13,05	596	1,328	579	621	446	65	11,884
1998	N	14,46	7,677	6,780	13,57	884	1,920	958	746	582	84	11,864
Employment Commitments with Response to Sector												
1978	N	14,03	10,27	3,754	13,50	527	422	400	595	301	36	12,129
1983	N	13,22	8,520	4,707	12,72	505	623	414	522	319	38	11,758
1988	N	12,51	7,530	4,986	12,00	513	924	453	489	312	43	11,053
1993	N	13,45	7,193	6,257	12,86	585	1,302	573	604	435	64	11,724
1998	N	13,92	7,405	6,516	13,07	846	1,856	898	704	545	81	11,477
Academe												
1978	%	57.0	53.5	66.6	57.5	45.5	59.0	32.8	65.4	64.1	55.6	57.4
1983	%	51.3	48.2	56.9	51.4	46.5	63.6	37.7	49.4	55.2	55.3	51.6
1988	%	50.8	47.1	56.3	50.5	56.3	67.4	36.6	57.5	54.8	41.9	51.0
1993	%	52.4	47.4	58.2	52.2	57.3	53.6	44.2	57.1	59.3	57.8	52.3
1998	%	50.0	44.1	56.6	51.0	33.7	29.6	29.1	52.8	59.6	54.3	50.9
Industry/Self-Employed												
1978	%	14.8	17.8	6.5	13.7	43.1	31.8	51.8	4.7	9.6	11.1	14.1
1983	%	19.1	23.5	11.1	18.3	40.4	31.8	47.1	8.2	14.1	10.5	18.7
1988	%	19.5	24.4	12.0	19.0	31.0	28.2	44.4	8.6	15.4	11.6	19.0
1993	%	18.8	24.3	12.5	18.1	33.8	39.4	40.8	8.4	16.1	7.8	18.4
1998	%	24.5	32.5	15.4	22.5	54.4	65.5	55.7	13.4	14.9	17.3	23.2
Government												
1978	%	12.3	13.5	9.0	12.5	5.3	2.1	9.3	10.1	13.6	22.2	12.3
1983	%	11.2	12.3	9.2	11.4	5.0	1.9	8.7	14.6	13.8	13.2	11.1
1988	%	10.7	12.0	8.7	11.0	3.5	1.2	8.2	12.1	11.9	23.3	10.7
1993	%	9.9	11.5	8.2	10.2	3.6	2.2	8.0	9.6	12.0	17.2	9.9
1998	%	8.2	9.8	6.3	8.4	4.6	1.3	6.9	7.8	7.5	7.4	8.3
Other												
1978	%	15.9	15.1	18.0	16.3	6.1	7.1	6.3	19.8	12.6	11.1	16.2
1983	%	18.5	16.1	22.8	18.9	8.1	2.7	6.5	27.8	16.9	21.1	18.6
1988	%	19.1	16.5	23.1	19.5	9.2	3.1	10.8	21.9	17.9	23.3	19.4
1993	%	18.9	16.9	21.2	19.5	5.3	4.8	7.0	24.8	12.6	17.2	19.4
1998	%	17.4	13.6	21.8	18.1	7.3	3.6	8.4	26.0	18.0	21.0	17.6

*Includes Pacific Islander.

†Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 27. Research doctorates by employment sector and Carnegie classification, 1998*

Research I							Research II						
Sector	Number of Ph.D.s	Percent of Research I	Percent of Sector	Number of Ph.D.s	Percent of Research II	Percent of Sector	Sector	Number of Ph.D.s	Percent of Doctoral I	Percent of Sector	Number of Ph.D.s	Percent of Doctoral II	Percent of Sector
Academe	8,444	48.3	67.8	1,658	50.7	13.3							
Government	1,303	7.5	65.5	244	7.5	12.3							
Industry	5,583	31.9	72.1	841	25.7	10.9							
Other	2,150	12.3	51.9	525	16.1	12.7							
Doctoral I							Doctoral II						
Sector	Number of Ph.D.s	Percent of Doctoral I	Percent of Sector	Number of Ph.D.s	Percent of Doctoral II	Percent of Sector	Sector	Number of Ph.D.s	Percent of Doctoral I	Percent of Sector	Number of Ph.D.s	Percent of Doctoral II	Percent of Sector
Academe	1,395	46.1	11.2	525	38.6	4.2							
Government	204	6.7	10.3	114	8.4	5.7							
Industry	637	21.1	8.2	408	30.0	5.3							
Other	790	26.1	19.1	313	23.0	7.5							
Other													
Sector	Number of Ph.D.s	Percent of Other	Percent of Sector										
Academe	425	35.6	3.4										
Government	124	10.4	6.2										
Industry	278	23.3	3.6										
Other	368	30.8	8.9										

* For overall totals (percent) by Carnegie classification, see Table 4.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 28. Doctorate recipients reporting postdoctoral plans to return to state of residence during high school, 1998 (by percent)

Place of High School	All Fields	Broad Field of Doctorate						
		Physical Sciences*	Engineering	Life Sciences	Social Sciences	Humanities	Education	Prof./Other Fields
Total Returning	28.9	20.2	24.9	25.2	27.8	22.7	46.6	28.0
Alabama	36.7	20.0	34.5	25.4	28.6	24.4	55.9	42.3
Alaska	15.9	~~~	0.0	11.1	7.1	0.0	~~~	~~~
Arizona	25.4	16.7	10.5	24.4	8.1	19.4	59.6	21.4
Arkansas	25.7	18.8	11.1	~~~	21.7	16.1	36.7	20.0
California	47.1	44.1	61.2	47.7	47.1	33.8	58.7	38.2
Colorado	21.4	23.8	22.0	17.0	25.0	16.9	30.0	16.0
Connecticut	14.7	9.2	11.1	21.8	8.7	7.2	27.0	~~~
Delaware	13.3	5.9	16.7	0.0	5.6	20.0	~~~	0.0
District of Columbia	24.1	0.0	0.0	21.4	~~~	15.4	~~~	~~~
Florida	30.6	19.0	25.8	24.2	25.7	33.0	48.3	31.9
Georgia	38.5	16.3	21.9	20.5	34.5	37.0	59.3	~~~
Hawaii	18.3	0.0	7.1	~~~	10.0	14.3	~~~	~~~
Idaho	15.5	7.1	0.0	13.6	~~~	13.3	~~~	0.0
Illinois	26.6	16.0	22.0	20.2	30.1	20.5	45.7	23.3
Indiana	19.8	8.8	7.8	19.6	6.9	14.5	48.1	13.8
Iowa	20.1	9.4	15.0	17.9	11.8	15.9	38.1	9.7
Kansas	19.0	11.5	0.0	20.8	12.5	11.4	40.7	13.6
Kentucky	28.6	14.8	11.1	32.7	32.6	26.2	48.2	21.7
Louisiana	36.1	25.6	~~~	25.4	31.9	30.2	53.3	~~~
Maine	12.6	14.3	9.1	8.0	14.3	10.0	15.8	~~~
Maryland	22.0	19.3	27.4	21.5	21.4	15.1	33.3	18.9
Massachusetts	26.7	21.2	30.0	26.4	30.8	18.0	37.3	28.6
Michigan	26.9	13.0	25.8	25.9	27.1	15.1	47.8	32.2
Minnesota	26.4	29.8	28.0	21.6	21.9	22.6	43.8	15.2
Mississippi	35.5	~~~	~~~	20.0	22.7	21.1	50.5	21.1
Missouri	29.7	16.7	22.5	18.8	21.7	19.3	54.7	~~~
Montana	15.3	8.3	0.0	7.7	12.5	0.0	~~~	0.0
Nebraska	25.8	8.0	17.6	19.6	29.5	15.6	40.3	~~~
Nevada	21.2	0.0	16.7	22.2	~~~	20.0	25.0	0.0
New Hampshire	8.4	4.8	11.8	6.3	3.0	6.9	~~~	16.7
New Jersey	20.3	20.5	17.9	11.4	18.7	16.5	33.3	30.8
New Mexico	23.2	16.1	29.4	13.2	14.3	11.5	59.3	20.0
New York	29.4	20.8	19.5	22.9	33.5	30.4	39.0	33.3
North Carolina	29.9	13.6	17.0	28.4	27.8	19.5	48.7	31.0
North Dakota	21.6	0.0	12.5	~~~	~~~	0.0	~~~	16.7
Ohio	27.1	17.2	28.2	21.1	23.1	20.6	46.8	22.5
Oklahoma	31.8	~~~	16.0	24.4	31.4	5.3	56.4	~~~
Oregon	20.0	8.9	18.2	13.2	15.6	13.2	51.4	~~~
Pennsylvania	27.8	19.3	17.1	25.1	23.2	23.5	49.2	24.8
Rhode Island	18.3	16.7	15.4	11.5	~~~	14.3	17.6	25.0
South Carolina	28.5	12.5	7.1	31.3	25.0	14.3	44.4	~~~
South Dakota	22.9	0.0	22.2	20.0	~~~	7.1	40.0	16.7
Tennessee	27.6	8.1	33.3	22.0	18.4	18.9	45.5	25.0
Texas	46.7	31.2	48.3	43.5	41.2	41.7	65.1	44.6
Utah	32.1	15.0	11.1	27.7	42.1	36.7	46.4	~~~
Vermont	7.8	8.3	0.0	0.0	11.1	0.0	21.4	0.0
Virginia	23.8	11.8	21.4	18.0	15.8	16.5	52.9	23.1
Washington	24.5	17.2	25.0	24.5	17.3	21.5	46.0	20.0
West Virginia	16.5	10.5	8.7	6.9	14.3	3.7	39.1	0.0
Wisconsin	20.7	9.6	13.3	25.2	22.7	21.1	30.1	18.8
Wyoming	5.6	0.0	0.0	9.1	0.0	0.0	7.1	25.0
Puerto Rico	50.3	55.0	~~~	35.5	60.5	~~~	59.5	~~~

*Includes mathematics and computer sciences.

~~~ Percentages greater than 25% based on frequencies less than 10 were considered spuriously high and have been suppressed.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 29. Cumulative debt related to education of doctorate recipients by broad field, 1998

| Cumulative Debt   | Group Total |      | Physical Sciences* |      | Engineering |      | Life Sciences |      | Social Sciences |      | Humanities |      | Education |      | Prof./Other |      |
|-------------------|-------------|------|--------------------|------|-------------|------|---------------|------|-----------------|------|------------|------|-----------|------|-------------|------|
|                   | N           | %    | N                  | %    | N           | %    | N             | %    | N               | %    | N          | %    | N         | %    | N           | %    |
| Total             | 38,147      | 100  | 6,094              | 100  | 5,340       | 100  | 7,748         | 100  | 6,145           | 100  | 4,991      | 100  | 5,775     | 100  | 2,054       | 100  |
| \$5,000 or less   | 3,817       | 10.0 | 663                | 10.9 | 511         | 9.6  | 884           | 11.4 | 531             | 8.6  | 525        | 10.5 | 528       | 9.1  | 175         | 8.5  |
| \$5,001-\$10,000  | 3,174       | 8.3  | 506                | 8.3  | 385         | 7.2  | 737           | 9.5  | 519             | 8.4  | 461        | 9.2  | 408       | 7.1  | 158         | 7.7  |
| \$10,001-\$15,000 | 2,533       | 6.6  | 390                | 6.4  | 278         | 5.2  | 559           | 7.2  | 437             | 7.1  | 439        | 8.8  | 311       | 5.4  | 119         | 5.8  |
| \$15,001-\$20,000 | 2,024       | 5.3  | 269                | 4.4  | 206         | 3.9  | 390           | 5.0  | 433             | 7.0  | 328        | 6.6  | 279       | 4.8  | 119         | 5.8  |
| \$20,001-\$25,000 | 1,512       | 4.0  | 196                | 3.2  | 123         | 2.3  | 256           | 3.3  | 352             | 5.7  | 277        | 5.5  | 219       | 3.8  | 89          | 4.3  |
| \$25,001-\$30,000 | 1,284       | 3.4  | 119                | 2.0  | 123         | 2.3  | 221           | 2.9  | 297             | 4.8  | 240        | 4.8  | 197       | 3.4  | 87          | 4.2  |
| \$30,000+         | 4,394       | 11.5 | 325                | 5.3  | 394         | 7.4  | 658           | 8.5  | 1,331           | 21.7 | 697        | 14.0 | 669       | 11.6 | 320         | 15.6 |
| No Debt           | 19,409      | 50.9 | 3,626              | 59.5 | 3,320       | 62.2 | 4,043         | 52.2 | 2,245           | 36.5 | 2,024      | 40.6 | 3,164     | 54.8 | 987         | 48.1 |

\*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 30. Cumulative debt related to education of doctorate recipients by demographic group, 1998

| Cumulative Debt   | Sex    |      |        |      | Citizenship  |      |            |      |            |      | Race /Ethnicity (U.S. citizens only) |      |       |      |          |      |                  |      |        |      |
|-------------------|--------|------|--------|------|--------------|------|------------|------|------------|------|--------------------------------------|------|-------|------|----------|------|------------------|------|--------|------|
|                   | Male   |      | Female |      | U.S. Citizen |      | Perm. Visa |      | Temp. Visa |      | Asian*                               |      | Black |      | Hispanic |      | American Indian† |      | White  |      |
|                   | N      | %    | N      | %    | N            | %    | N          | %    | N          | %    | N                                    | %    | N     | %    | N        | %    | N                | %    | N      | %    |
| \$5,000 or less   | 2,255  | 10.2 | 1,558  | 9.7  | 2,667        | 10.0 | 210        | 8.2  | 865        | 10.6 | 93                                   | 8.4  | 154   | 11.2 | 109      | 10.0 | 24               | 13.8 | 2,251  | 10.1 |
| \$5,001-\$10,000  | 1,895  | 8.6  | 1,276  | 8.0  | 2,500        | 9.4  | 160        | 6.3  | 453        | 5.5  | 115                                  | 10.4 | 127   | 9.3  | 105      | 9.6  | 15               | 8.6  | 2,084  | 9.3  |
| \$10,001-\$15,000 | 1,533  | 6.9  | 998    | 6.2  | 2,103        | 7.9  | 104        | 4.1  | 300        | 3.7  | 102                                  | 9.2  | 119   | 8.7  | 106      | 9.7  | 18               | 10.3 | 1,729  | 7.7  |
| \$15,001-\$20,000 | 1,145  | 5.2  | 879    | 5.5  | 1,724        | 6.5  | 73         | 2.9  | 199        | 2.4  | 68                                   | 6.1  | 93    | 6.8  | 79       | 7.2  | 14               | 8.0  | 1,433  | 6.4  |
| \$20,001-\$25,000 | 843    | 3.8  | 669    | 4.2  | 1,313        | 4.9  | 51         | 2.0  | 130        | 1.6  | 44                                   | 4.0  | 84    | 6.1  | 84       | 7.7  | 12               | 6.9  | 1,067  | 4.8  |
| \$25,001-\$30,000 | 668    | 3.0  | 615    | 3.8  | 1,107        | 4.2  | 45         | 1.8  | 121        | 1.5  | 36                                   | 3.3  | 82    | 6.0  | 64       | 5.9  | 11               | 6.3  | 899    | 4.0  |
| \$30,000+         | 2,391  | 10.8 | 2,002  | 12.5 | 3,556        | 13.3 | 169        | 6.6  | 616        | 7.5  | 126                                  | 11.4 | 306   | 22.4 | 198      | 18.1 | 28               | 16.1 | 2,819  | 12.6 |
| No Debt           | 11,400 | 51.5 | 7,986  | 50.0 | 11,683       | 43.8 | 1,741      | 68.2 | 5,481      | 67.1 | 523                                  | 47.2 | 404   | 29.5 | 347      | 31.8 | 52               | 29.9 | 10,111 | 45.2 |

\*Includes Pacific Islander.

† Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-1. Doctorate recipients with no indebtedness by sex, citizenship, and race/ethnicity, 1988 and 1998 (by percent)

|                                            | <b>1988</b> | <b>1998</b> |
|--------------------------------------------|-------------|-------------|
| <b>Total</b>                               | 52.9        | 50.9        |
| <b>Sex</b>                                 |             |             |
| Male                                       | 53.1        | 51.5        |
| Female                                     | 52.6        | 50.0        |
| <b>Citizenship</b>                         |             |             |
| U.S. Citizen                               | 45.3        | 43.8        |
| Non-U.S., Permanent Visa                   | 62.6        | 68.2        |
| Non-U.S., Temporary Visa                   | 79.3        | 67.1        |
| <b>Race/Ethnicity (U.S. citizens only)</b> |             |             |
| Asian*                                     | 47.0        | 47.2        |
| Black                                      | 39.5        | 29.5        |
| Hispanic                                   | 33.8        | 31.8        |
| American Indian†                           | 36.7        | 29.9        |
| White                                      | 45.9        | 45.2        |

\*Includes Pacific Islander.

†Includes Alaskan Native.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-2. Indebtedness of U.S.-citizen doctorate recipients by sex, field of study, Carnegie class, and institution control type, 1998

|                             | Level of Indebtedness (%) |                  |                    |
|-----------------------------|---------------------------|------------------|--------------------|
|                             | None                      | \$15,000 or Less | More than \$15,000 |
| <b>Total, U.S. Citizens</b> | 43.8                      | 27.3             | 28.9               |
| <b>Sex</b>                  |                           |                  |                    |
| Male                        | 43.1                      | 28.8             | 28.0               |
| Female                      | 44.6                      | 25.6             | 29.8               |
| <b>Field</b>                |                           |                  |                    |
| Physical Sciences*          | 48.4                      | 31.3             | 20.3               |
| Engineering                 | 53.0                      | 27.5             | 19.5               |
| Life Sciences               | 43.6                      | 32.6             | 23.8               |
| Social Sciences             | 31.4                      | 24.6             | 44.1               |
| Humanities                  | 36.4                      | 29.2             | 34.4               |
| Education                   | 54.3                      | 21.6             | 24.1               |
| Professional/Other          | 44.2                      | 22.6             | 33.2               |
| <b>Carnegie Class</b>       |                           |                  |                    |
| Research I                  | 43.5                      | 29.5             | 27.1               |
| Research II                 | 41.2                      | 25.4             | 33.4               |
| Doctoral I                  | 46.6                      | 21.6             | 31.9               |
| Doctoral II                 | 49.4                      | 23.0             | 27.6               |
| Other                       | 43.1                      | 20.5             | 36.4               |
| <b>Type of Control</b>      |                           |                  |                    |
| Public                      | 44.3                      | 27.7             | 28.0               |
| Private                     | 42.8                      | 26.5             | 30.7               |

\* Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-3. Indebtedness of non-U.S. citizen doctorate recipients by sex, field of study, and Carnegie class, 1998

|                          | Level of Indebtedness (%) |                  |                    |
|--------------------------|---------------------------|------------------|--------------------|
|                          | None                      | \$15,000 or Less | More than \$15,000 |
| Total, Non-U.S. Citizens | 67.4                      | 19.5             | 13.1               |
| <b>Sex</b>               |                           |                  |                    |
| Male                     | 66.1                      | 20.2             | 13.7               |
| Female                   | 70.5                      | 17.7             | 11.7               |
| <b>Field</b>             |                           |                  |                    |
| Physical Sciences*       | 74.5                      | 17.8             | 7.7                |
| Engineering              | 70.2                      | 17.2             | 12.5               |
| Life Sciences            | 68.6                      | 19.6             | 11.8               |
| Social Sciences          | 56.7                      | 22.8             | 20.5               |
| Humanities               | 59.4                      | 25.3             | 15.3               |
| Education                | 58.0                      | 21.6             | 20.4               |
| Professional/Other       | 58.3                      | 20.5             | 21.1               |
| <b>Carnegie Class:</b>   |                           |                  |                    |
| Research I               | 68.3                      | 19.0             | 12.7               |
| Research II              | 64.3                      | 21.8             | 13.9               |
| Doctoral I               | 61.4                      | 20.4             | 18.2               |
| Doctoral II              | 70.6                      | 18.0             | 11.4               |
| Other                    | 66.2                      | 22.9             | 10.9               |

\*Includes mathematics and computer sciences.

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-4. Indebtedness of U.S.-citizen doctorate recipients by primary source of support, 1998

| Primary Source of Support | Level of Indebtedness (%) |                  |                    |
|---------------------------|---------------------------|------------------|--------------------|
|                           | None                      | \$15,000 or less | More than \$15,000 |
| Teaching Assistantship    | 32.7                      | 32.3             | 35.0               |
| Research Assistantship    | 40.7                      | 34.6             | 24.8               |
| Fellowship or Grant       | 42.4                      | 33.8             | 23.8               |
| Own Resources             | 46.7                      | 20.1             | 33.8               |
| Employer                  | 71.9                      | 17.9             | 10.2               |
| Other                     | 63.2                      | 18.2             | 18.6               |

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-5. Indebtedness of U.S.-citizen doctorate recipients by postdoctoral employment, 1998

| Postdoctoral Employment | Level of Indebtedness (%) |                  |                    |
|-------------------------|---------------------------|------------------|--------------------|
|                         | None                      | \$15,000 or less | More than \$15,000 |
| Academe                 | 41.7                      | 26.6             | 31.6               |
| Government              | 53.4                      | 21.9             | 24.7               |
| Industry                | 46.7                      | 26.7             | 26.6               |
| Other                   | 50.2                      | 24.0             | 25.9               |

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-6. Indebtedness of U.S.-citizen doctorate recipients by degree and institution control, 1998

| Degree/Control            | Number | Level of Indebtedness (%) |                  |                    |
|---------------------------|--------|---------------------------|------------------|--------------------|
|                           |        | None                      | \$15,000 or less | More than \$15,000 |
| Public Bachelor's Degree  |        |                           |                  |                    |
| Public Ph.D.              | 11,617 | 44.8                      | 27.1             | 28.1               |
| Private Ph.D.             | 3,343  | 43.4                      | 24.6             | 32.0               |
| Private Bachelor's Degree |        |                           |                  |                    |
| Public Ph.D.              | 5,991  | 42.3                      | 29.5             | 29.2               |
| Private Ph.D.             | 4,339  | 41.9                      | 28.3             | 29.8               |

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates

Table 2-7. Indebtedness of U.S.-citizen doctorate recipients by parental educational attainment, 1998

| Education Level           | Level of Indebtedness (%) |                  |                    |
|---------------------------|---------------------------|------------------|--------------------|
|                           | None                      | \$15,000 or less | More than \$15,000 |
| Total, U.S. Citizens      | 43.8                      | 27.3             | 28.9               |
| <b>Father's Education</b> |                           |                  |                    |
| High school or less       | 44.5                      | 25.2             | 30.2               |
| Some college              | 41.4                      | 27.9             | 30.7               |
| Advanced degree           | 45.5                      | 28.3             | 26.2               |
| <b>Mother's Education</b> |                           |                  |                    |
| High school or less       | 44.4                      | 25.8             | 29.8               |
| Some college              | 42.8                      | 28.3             | 28.9               |
| Advanced degree           | 44.8                      | 27.8             | 27.4               |
| <b>Both Parents</b>       |                           |                  |                    |
| High school or less       | 45.5                      | 25.0             | 29.5               |
| Some college              | 41.3                      | 28.4             | 30.3               |
| Advanced degree           | 46.2                      | 27.8             | 26.0               |

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates.

Table 2-8. Indebtedness of U.S.-citizen doctorate recipients by marital status and number of dependents, 1998

| Number of Ph.D.s                   | Level of Indebtedness (%) |                  |                    |
|------------------------------------|---------------------------|------------------|--------------------|
|                                    | None                      | \$15,000 or less | More than \$15,000 |
| <b>Marital Status</b>              |                           |                  |                    |
| Married/marriage-like relationship | 16,617                    | 47.5             | 26.2               |
| Separated, widowed, or divorced    | 2,160                     | 36.1             | 25.0               |
| Never married                      | 7,623                     | 38.1             | 30.4               |
| <b>Number of Dependents</b>        |                           |                  |                    |
| None                               | 14,439                    | 42.1             | 28.5               |
| One                                | 5,224                     | 43.2             | 27.4               |
| Two                                | 3,326                     | 47.7             | 26.7               |
| Three or More                      | 3,249                     | 47.9             | 23.1               |

SOURCE: NSF/NIH/NEH/USED/USDA, Survey of Earned Doctorates